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ABSTRACT

Focusing on the occupational clusters of health and manufacturing, this unit entitled "The Dairy Industry" is one of four grade 3 units which are part of a total set of twenty-seven career development curriculum units for grades K-6. This unit is organized into four sections. Section 1 identifies one career development-centered curriculum (CDCC) element (life-role understanding), two career development themes (e.g., the student will understand the characteristics of life-roles and their functions), four unit goals (e.g., the student will increase his/her awareness of workers within the dairy industry), and four performance objectives (e.g., given a list of twenty workers, the student will identify with at least 80% accuracy those workers within the dairy industry or those whose work contributes to the dairy industry). Also included in Section I are evaluation procedures for a pre- and post-assessment, four evaluation sheets, answer keys, and evaluation tabulation forms. Section II describes teaching strategies for four unit subtopics (capsules) and includes suggested resources for teaching each one. Capsule titles are farm, storage and transportation, creamery, and retailer and consumer. Section III contains fifteen teacher reference sheets and section IV contains twenty-eight student activity sheets. (JH)

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Suggested for
Grade 3

ED169260

DAIRY INDUSTRY

one in a series
of

CAREER DEVELOPMENT CURRICULUM UNITS

for the
Elementary Classroom

CE 020 087

CDCC Project
ESEA Title III
Coloma Community Schools
P.O. Box 218
Coloma, Michigan 49038

DAIRY INDUSTRY

Grade 3

(Third Edition)

one in a series
of

CAREER DEVELOPMENT CURRICULUM UNITS

for the

ELEMENTARY CLASSROOM

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CAREER DEVELOPMENT CENTERED CURRICULUM PROJECT

ESEA TITLE III

Gerald Geik, Project Director

William Barrett, Superintendent

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FOREWORD

The series "Career Development Curriculum Units for the Elementary Classroom" represents the outcome of three and one-half years of effort on the part of many individuals within Coloma Community Schools. The work was completed under an ESEA Title III project entitled "Career Development Centered Curriculum" (CDCC) in cooperation with the Michigan Department of Education. The series constitutes a response to the ever-increasing need to augment and enhance each students' career development process.

The series of twenty-seven curriculum units consists of a logical, sequenced arrangement of learning activities based on development tasks and content consistent with accepted career development theory and practice.

The approach is one of integrating career awareness with existing subject matter as well as building into the curriculum a sound approach to self-awareness. Learning activities are linked to performance objectives for which there are evaluation techniques; making it possible to assess impact on learners.

Gerald Geik
Project Director

ELEMENTARY CAREER DEVELOPMENT:
THE UNIT APPROACH

An Elementary Career Development Curriculum Unit is a group of interdisciplinary learning experiences for which there are expected outcomes identified in the form of performance objective. Because they are interdisciplinary, they include learning and practice in math, communication arts, science and social studies as vehicles for conveying the career development aspects of an individual's growth. Learning activities are built around either self-awareness or occupational cluster topics.

Developed by teachers or counselors, they are based on CDCC themes and elements, aligned with career developmental tasks.

They include a variety of teaching strategies in the form of role-playing, discussions, work sheets, field trips, use of role models, use of A.V. materials, etc. They include evaluation strategies, (both observational and paper and pencil), based on unit performance objectives. Time of implementation for each unit is approximately two instruction hours per day for a period of two to three weeks. One unit is taught during each nine-week grading period at each grade level.

A single unit is a small part of a total sequence of learning experiences that all together contribute to the individual's career development process.

UNIT TITLES IN THE SERIES
"CAREER DEVELOPMENT CURRICULUM UNITS FOR THE ELEMENTARY CLASSROOM"

	UNIT TITLE	FOCUS
K	ME	Self Awareness: Physical Self
	INSIDE ME	Self Awareness: Emotional Self
	SCHOOL WORKERS	Occupational Clusters: Public Service, Clerical
	COMMUNITY HELPERS	Occupational Clusters: Public Service, Natural Resources, Health
1	FRIENDSHIP	Self Awareness: Social Self
	A FEW OF OUR FAVORITE THINGS	Occupational Clusters: Arts, Technology, Research, Personal & Product Services
	TELEPHONE WORKERS	Occupational Clusters: Transportation, & Communication
	THE FOOD STORE	Occupation Clusters: Business & Sales

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Coloma, Michigan

	UNIT TITLE	FOCUS
2	MY ENVIRONMENT	Self Awareness: Environmental & Physical Self
	BAKING INDUSTRY	Occupational Clusters: Natural Resources, Manufacturin
	FIREFIGHTERS	Occupational Cluster: Public Service
	PET INDUSTRY	Occupational Clusters: Public Service, Personal & Product Services
3	DAIRY INDUSTRY	Occupational Clusters: Health, Manufacturing
	RESPONDING BEHAVIOR	Self Awareness: Emotional & Social Self
	RESTAURANT INDUSTRY	Occupational Clusters: Health, Hospitality and Recreation
	AIRLINE WORKERS	Occupational Clusters: Health, Hospitality, Recreatio Clerical, Technology & Research
4	FORESTRY	Occupational Cluster: Natural Resources
	BEST FOOT FORWARD	Self Awareness: Self Appraisal, Goal Setting and Social Self
	POSTAL WORKERS	Occupational Cluster: Public Service
	POLICE WORKERS	Occupational Clusters: Clerical, Public Service
5	OUR GROUP AND ME	Self Awareness: Group Roles & Social Self
	MANUFACTURING	Occupational Clusters: Clerical, Business, Sales & Trades, Manufacturing
	HOSPITAL WORKERS	Occupational Clusters: Technology & Research, Clerical, Personal & Product Service & Health
	MY FEELINGS ARE ME	Self Awareness: Emotional Self
6	GOING ABROAD, ANYONE?	Occupational Clusters: Transportation & Communication Hospitality & Recreation
	ME, MYSELF AND I	Self Awareness: Physical, Emotional, Social & Intellectual Self
	T.V. INDUSTRY	Occupational Clusters: Business, Sales & Trades, Arts and Entertainment, Transportation & Communication, Technology and Research

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Coloma, Michigan

THE CDCC PROGRAM (K-6)

One dimension of human growth and development is the career development process. In this process each person progresses through a sequence of developmental tasks that make it possible for that person to become a self-fulfilled individual. This is a life-long process involving experiences and decisions that sequentially build on each other. When taken cumulatively, they contribute to the formulation of a realistic self-concept that can be expressed through one's occupational, leisure, family, and civic life-roles.

The career development process can be augmented by building career development curriculum units into the already existing curriculum. In developing the units, three things were considered: 1) career development themes, 2) career development tasks through which individuals normally progress, and 3) subject matter in the already existing curricula. All three of these were brought into focus when generating component goals and objectives and developing learning activities.

The curriculum units altogether constitute the sequential placement of career development activities into the existing K-6 curriculum. Career Development Themes define the *scope* and Career Development Tasks define the *sequence* of the CDCC program. To signify the relationship of the elementary program to the total, elements, themes, developmental tasks and occupational clustering system are presented.

CDCC PROJECT ELEMENTS AND THEMES

CDCC ELEMENT I -- Life-Role Understanding (occupational, avocational, family, civic)

Theme 1.1 The student will understand life-role activity as self-enhancing. (psychological, economic, life-style implications)

Theme 1.2 The student will understand life-role activity as societal-contributing. (economic, societal-need implications)

Theme 1.3 The student will understand the relationship of education to life roles.

Theme 1.4 The student will understand the desirable attributes of individuals in life roles.

Theme 1.5 The student will understand the characteristics of life-roles and their functions.

Theme 1.6 The student will understand the relationship of life-role changeableness to individual cope-ability.

CDCC ELEMENT II -- Decision-Making Skill Development and Utilization

Theme 2.1 The student will set personally relevant goals as part of decision-making.

Theme 2.2 The student will identify and use information about self and life roles as part of decision-making.

Theme 2.3 The student will understand decision-making as identifying alternatives, selecting the alternative most consistent with goals, and taking steps to implement a course of action.

CDCC ELEMENT III -- Realistic Self Concept Formulation

Theme 3.1 The student will understand his or her own uniqueness as a result of personal learning, growth, and maturation.

Theme 3.2 The student will understand the relationship of social and education forces to his or her individual development.

Theme 3.3 The student will understand the relationship of self-knowledge to a value system unique to him or her.

Theme 3.4 The student will understand the relationship of his or her interests, aptitudes and achievements to career goal realization.

CAREER DEVELOPMENT TASKS*
FOR
LIFE-ROLE UNDERSTANDING, C.D.C.C. ELEMENT I

K-3	4-6	7-9	10-12
Occupational values and attitudes are formed and are used as a basis for judgment. Children establish relationships between experience and action, manipulate language and symbols primarily by imitating models and accommodating their behavior to the behavior observed in others with whom they identify, i.e., people in various life-roles. (Focus is generally on home, school and neighborhood.) Children are acquiring respect for particular people and their life-roles, especially for the work they do. (Adults must foster positive attitudes toward all kinds of life-roles.) Children can distinguish between occupations primarily on the basis of tool and uniform clues. They develop interpersonal skills that permit them to gain acceptance by peers in parallel play and sharing.	Children continue to face the same kinds of tasks but with more complexity. They enter the phase of conceptual learning. They develop the ability to conceive the function of life-roles. They generalize (abstract) their respect for specific people and their life-roles to an appreciation of all people everywhere. As they learn the value of mankind, they learn to value themselves. They increase their knowledge of life-roles by expanding experiences beyond home, school and neighborhood. As they begin to understand the concept of work and value it as an institution, they develop self-direction--this helps build a positive self-concept. They are refining interpersonal skills to build confidence in their ability to successfully interact with peers in more complex types of group activities.	Youth develop the capacity to operate on hypothetical propositions--they have learned to think more logically and abstractly. They are better able to cope with cultural and environmental demands. They can make internal interpretations of environmental transactions and generalize these to other situations. Concepts which have been learned previously are used to build further concepts. As they learn about life-roles and life-role settings, they determine the subtle factors involved in life-role satisfaction and rewards--looking for what they personally find necessary, important and valuable. (They should acquire knowledge about life-roles and curricula to help them think realistically about their futures.)	Youth expand and refine tasks of earlier levels. They determine to a large extent, the course of their own futures. The individual must define the level of his or her educational aspiration and arrange training accordingly. Concepts which the individual holds about self and life-roles become internalized to the point where they form the basis for particular generalizations concerning his or her career life identity. The individual must acquire skills, responsibility, and confidence in life-roles through actual experiences. Through these experiences, individuals test their self concept.

*After Ginzberg (1951), Havighurst (1964), Super (1969), and Tennyson (1970).

CAREER DEVELOPMENTAL TASKS*
FOR
DECISION-MAKING SKILL DEVELOPMENT, C.D.C.C. ELEMENT II

K-3	4-6	7-9	10-12
Fantasy period: Children make unrealistic choices based on dreams and wishes. The individual does not wonder whether he or she has the appropriate abilities to do what he or she wants to do. (Teachers and parents should readily accept unrealistic statements.)	Late fantasy period, early tentative period. (During early tentative period, children should be helped to see that there are still a number of years before career plans must be set.)	Tentative period: The individual begins to recognize the problem of career choice; decisions are tentative but more realistic. The individual is continuously obtaining new information and experience, revising previous choices and making new choices. (Gradually the youngster should be helped to explore the difference between fantasy and reality in making decisions.) The individual begins to formulate a career hypothesis (tentative) --a narrowing process of identifying interests, values, capacities, and opportunities. Making successful decisions strengthens the individual's self-concept.	Late tentative period, realistic period: The individual's considerations become much more practical as well as important. The decision-making process must become personalized. Because the environment is constantly changing, a major real-life problem is how to plan for change--a realistic decision-making process for the individual requiring commitment with tentativeness. As the individual expresses his or her self-concept through complex real-life decisions, he or she becomes able to utilize personal attributes to influence the nature of future choices rather than merely to adapt to external pressures. Learning to make decisions and accept responsibility for them helps the individual develop responsible independence and individuality. The individual's career hypothesis is reformed to make adjustments for changing interests, abilities, values, and increased knowledge of life-roles.

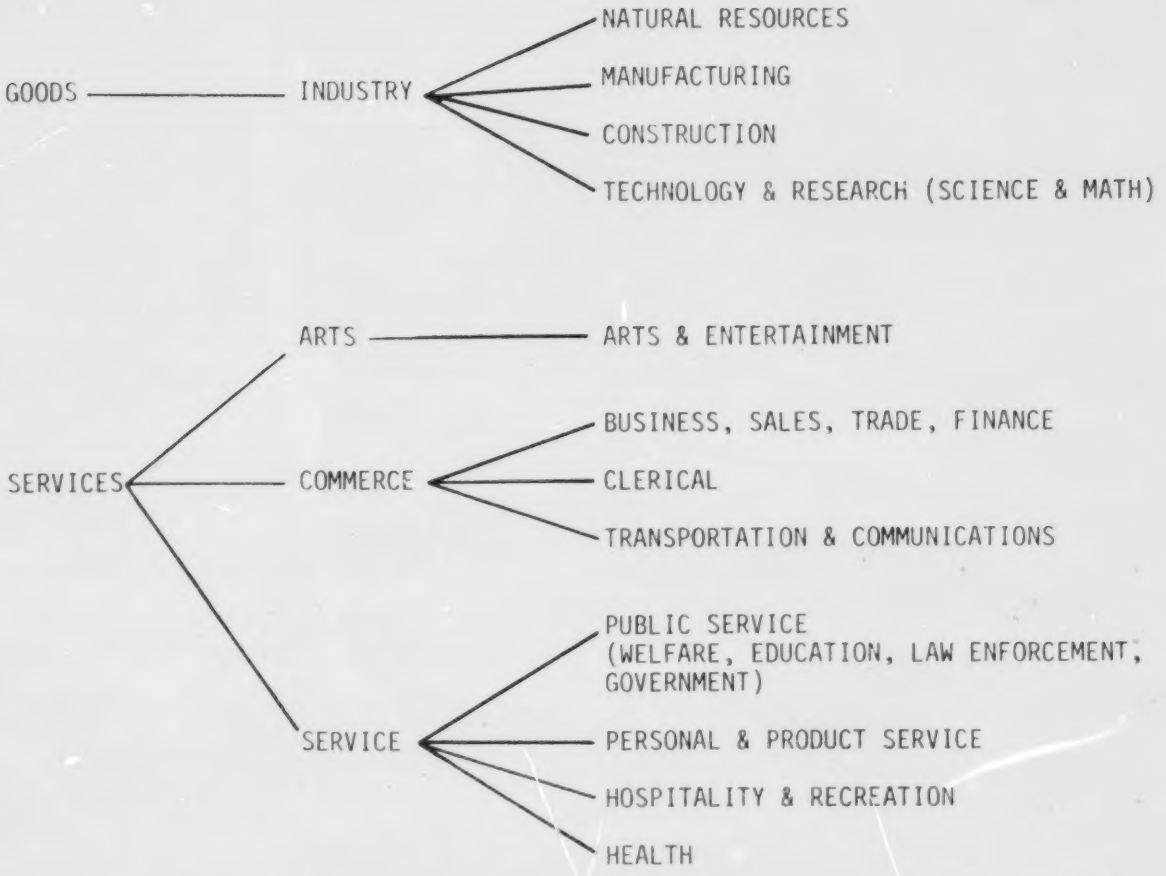
*After Ginzberg (1951), Havighurst (1964), Super (1969), and Tennyson (1970).

CAREER DEVELOPMENT TASKS*
FOR
REALISTIC SELF CONCEPT FORMULATION, C.D.C.C. ELEMENT III

K-3	4-6	7-9	10-12
Children become aware of themselves and their environment and differentiate between them. They are acquiring a sense of some control over their own course of events--a sense of agency. (The child must have successes to build self-confidence thus building tolerance for others). Children begin developing interpersonal skills that permit them to be socially acceptable to their peers. The child realizes that people are not objects and recognizes their humanness. (They need an atmosphere where mistakes are expected and each is respected as an individual.)	The individual is concerned about what he or she can do. The individual should be developing a positive self-concept. Each child develops his or her interest and ability to accomplish tasks. (Children need opportunities to work and reinforcement for it.) Individuals should be building social self confidence in themselves to relate successfully to others. (They need a continued atmosphere of mistakes being expected and tolerated and each is accepted and respected as an individual.)	The individual undergoes great changes physically, intellectually and socially. Each explores his or her self attributes while clarifying the self-concept--each individual reinterprets the self-concept developed earlier in terms of the 'new self'. Each individual must come to accept himself or herself as an entirely different person outwardly, and to some extent inwardly. The single most important task for the individual during this state is to achieve a sense of personal identity.	The individual is engaged in reality testing of the self-concept--each is checking his or her perceptions of abilities, aptitude and other personal resources against external reality. The individual is becoming aware of a preferred life style as related to self-concept.

*After Ginzberg (1951), Havighurst (1964), Super (1969), and Tennyson (1970).

C.D.C.C. OCCUPATIONAL CLUSTERING SYSTEM



USING THE UNIT

SECTION I	Identifies CDCC Elements, Themes, Unit Goals and Performance Objectives to be affected by teaching the unit to a group of learners; includes evaluation design and/or test items for determining impact on learners.
SECTION II	Describes teaching strategies by unit subtopics (capsules) and includes suggested resources for teaching each capsule.
SECTION III	Contains reference information for teachers from which a background can be built to effectively conduct the learning activities.
SECTION IV	Contains activity sheets for student's use.

"Dairy Industry"
Grade 3

Unit Rationale

The primary intent of this unit is to help students become aware of how the dairy industry plays an integral role in everyone's life.

The major topics included focus on an interdisciplinary approach with activities relating closely to math, science, language arts, and social studies.

Teacher Information

This unit has been designed to be taught over a period of four to six (4-6) weeks and will provide approximately fifty (50) instructional hours.

Teacher Preparation

1. Study the unit carefully.
2. Make copies of the necessary evaluation and activity sheets.
3. Refer to the Resources and Materials' Columns. Obtain the necessary materials and/or equipment.
4. Build a background by studying information about the dairy industry.
   A. Obtain reference material from:

      National Dairy Council
      11 N. Canal Street
      Chicago, IL 60606

   B. See Reference Sheet #6
   C. Refer to the World Book Encyclopedia or any other good encyclopedia.

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Grade 3

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ELEMENTS, THEMES, GOALS, AND PERFORMANCE OBJECTIVES
"Dairy Industry"
Grade 3

Element #I - Life-Role Understanding (occupational, avocational, family, civic)

Theme 1.5 - The student will understand the characteristics of life-roles and their functions.

Unit Goal - The student will increase his/her awareness of workers within the dairy industry.

Unit P.O. #1 - Given a list of twenty (20) workers, the student will identify with at least 80% accuracy those workers within the dairy industry or those whose work contributes to the dairy industry.
(Evaluation Sheet #1)

Unit Goal - The student will understand the way in which jobs are interrelated.

Unit P.O. #2 - Given five (5) pictures showing the different steps from the dairy farm to the consumer, the student will arrange them in the correct sequential order.
(Evaluation Sheet #2)

Unit Goal - The student will become familiar with the tools used by workers in the dairy industry.

Unit P.O. #3 - Given pictures of ten (10) tools, the student will identify with at least 80% accuracy those used by workers in the dairy industry.
(Evaluation Sheet #3)

Theme 1.6 - The student will understand the relationship of life-role changeableness to individual cope-ability.

Unit Goal - The student will understand how life-styles change over the years.

Unit P.O. #4 - Given five (5) sentences describing something from the dairy industry, the student will mark a (P) if it describes something from the dairy industry of the past or a (T) if it describes today's dairy industry.
(Evaluation Sheet #4)

Evaluation Procedure
"Dairy Industry"
Grade 3

Pre-Assessment

1. Do not discuss any aspect of this unit with the students before administering the pre-test evaluation sheets.

2. Make copies of the evaluation sheets for the students.

3. Distribute Evaluation Sheet #1. Read the directions for this sheet aloud as the students read along silently.

4. Read aloud to the students as they attempt to answer each test item. Do not explain the words or vocabulary to the students in a pre-test assessment.

5. Follow the same procedure for Evaluation Sheets #2, 3, and 4.

6. Find the answers for the evaluation sheets at the end of this evaluation section.

7. Record the students' raw scores on Evaluation Tabulation Form B in the correct columns. Total the number of students who met the criterion as stated in each performance objective.

8. Transfer these totals to Evaluation Tabulation Form A.

9. Study the pre-test results. Determine the areas in which the students need the most practice. Refer to the goals and objectives.

10. Observe that each capsule includes a list of optional activities. Choose those activities that will reinforce or teach the skills needed by the students.

11. Follow the post-assessment procedure listed at the conclusion of this unit.

Post-Assessment

1. Follow the directions as stated in the instructions #1-8 above, but record the results in the post-test sections on Evaluation Tabulation Forms A and B.

2. File the complete Forms A and B in the building office.

Evaluation Tabulation Form A

Unit Name "Dairy Industry" Teacher _____

Building _____ Grade 3rd

Performance Objective	*Evaluation Sheet #	Test Items	Accepted Level of Performance	# of Students Taking Test	# of Students Reaching Accepted Level	OPTIONAL % of Students Reaching Accepted Level
1 Pre - Identify workers in the Dairy Industry.	1	20	16			
1 Post- Identify workers in the Dairy Industry.	1	20	16			
2 Pre - Different steps in the Dairy Industry.	2	5	5			
2 Post- Different steps in the Dairy Industry.	2	5	5			
3 Pre - Identify tools used by Dairy Workers.	3	10	8			
3 Post- Identify tools used by Dairy Workers.	3	10	8			
4 Pre - Identify the difference between the Dairy Industry of the past and present.	4	5	5			
4 Post- Identify the difference between the Dairy Industry of the past and present.	4	5	5			

*Administer the tests in the sequence listed above. Date Returned to Principal _____

Evaluation Tabulation Form B

Unit Name "Dairy Industry" Teacher _____

Building _____ Grade 3rd

1. Record the students' raw scores for each evaluation sheet in the correct columns.
2. Figure the percentage of growth for each student at the conclusion of this unit.
3. Total the columns at the bottom to show the number of students who met the criteria as stated in the objectives.
4. Transfer these totals to Evaluation Tabulation Form A.

Evaluation Sheet #	1			2			3			4		
P.O. # / Student Names	#1 Pre	#1 Post	% of Growth	#2 Pre	#2 Post	% of Growth	#3 Pre	#3 Post	% of Growth	#4 Pre	#4 Post	% of Growth
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												
11.												
12.												
13.												
14.												21
15.												
16.												

23

Evaluation Tabulation Form B
(Continued)
"Dairy Industry"

Evaluation Sheet #	1			2			3			4		
P.O. # Student Names	#1 Pre	#1 Post	% of Growth	#2 Pre	#2 Post	% of Growth	#3 Pre	#3 Post	% of Growth	#4 Pre	#4 Post	% of Growth
17.												
18.												
19.												
20.												
21.												
22.												
23.												
24.												
25.												
26.												
27.												
28.												
29.												
30.												
TOTAL												

Evaluation Sheet #1

Name_____

Date_____

Underline those people who work in the Dairy Industry or whose work contributes indirectly to the Dairy Industry.

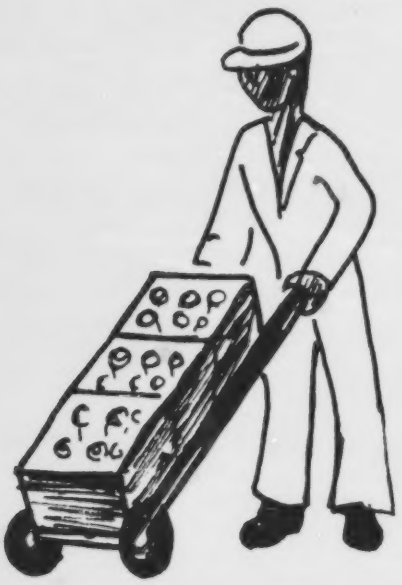
1. Bricklayer
2. Farmer
3. Cheese Maker
4. Ice Cream Maker
5. Miner
6. Carpenter
7. Mixers for Chocolate Milk
8. Veterinarian
9. County Health Inspector
10. Milk Sampler
11. Milk Deliverer
12. Train Engineer
13. Secretary
14. Banker
15. Postal Deliverer
16. Pilot
17. Loading Dock Worker
18. Cement Pourer
19. Printer
20. Sculptor

Evaluation Sheet #2

Name_____

Number these pictures to show the five (5) steps from the dairy farm to the consumer.

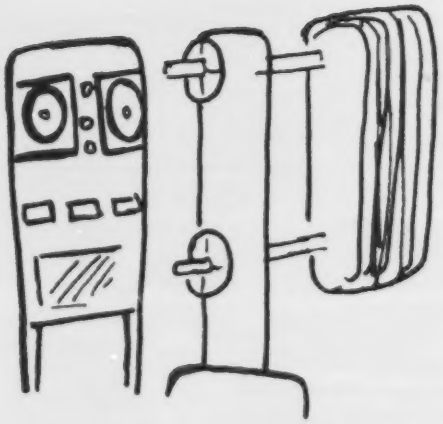
Date_____



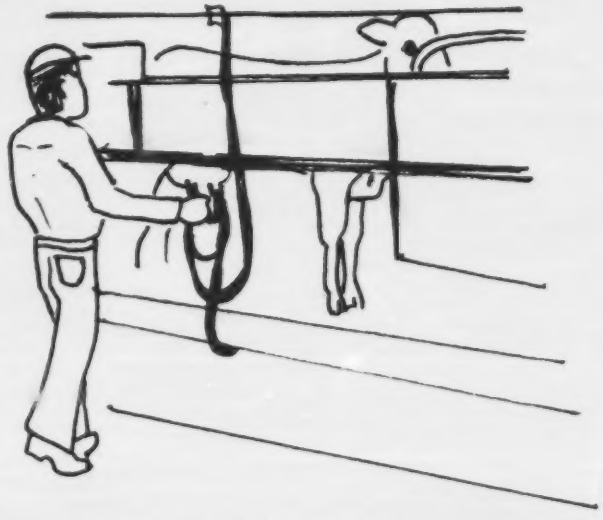
____ Filled containers are stored in a refrigerated room.

____ Warm milk is strained and cooled.

____ We drink good milk



____ The milk is pasteurized.

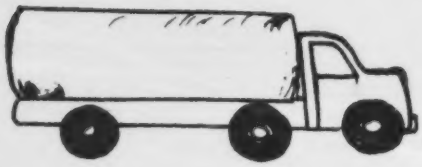


____ The cow is milked.

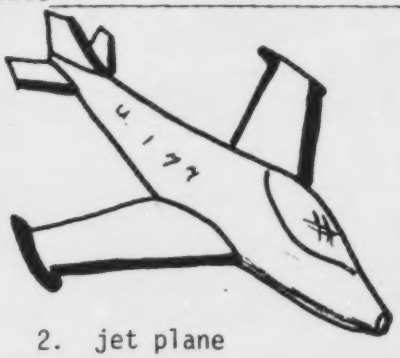
Evaluation Sheet #3

Name _____

Date _____



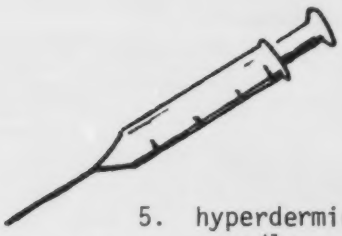
1. tank truck



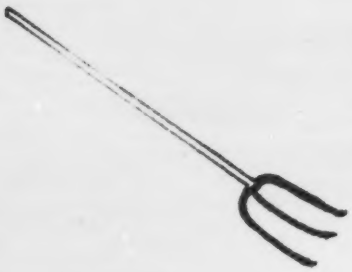
2. jet plane

3. milking machine

4. thermometer



5. hyperdermic needle



6. pitch fork

7. delivery truck

8. metal detector

9. trumpet

10. stanchion

Evaluation Sheet #4

Name_____

Date_____

Put a (P) in front of those sentences that tell about the dairy industry of the past. Put a (T) in front of those sentences that tell about today's dairy industry.

_____1. Mrs. Williams went to the store to buy some ice cream.

_____2. Mr. Potter, the milkman, guided his old horse over the same milk route every day.

_____3. Mrs. Burg was churning butter in her kitchen.

_____4. The tank truck ran out of gas on the way to the creamery.

_____5. The kids planted seeds in their milk cartons.

Answers for the Evaluation Sheets

Evaluation Sheet #1

2. Farmer
3. Cheese Maker
4. Ice Cream Maker
7. Mixers for Chocolate Milk
8. Veterinarian
9. County Health Inspector
10. Milk Sampler
11. Milk Deliverer
17. Loading Dock Worker

Evaluation Sheet #2

1. The cow is milked.
2. Warm milk is strained and cooled.
3. The milk is pasteurized.
4. Filled containers are stored in a refrigerator room.
5. We drink good milk.

Evaluation Sheet #3

1. tank truck
3. milking machine
4. thermometer
5. hyperdermic needle
6. pitch fork
7. delivery truck
10. stanchion

Evaluation Sheet #4

1. T
2. P
3. P
4. T
5. T

Capsule #1
Farm

I. Discuss the following questions with the students:

A. Ask how many of them have touched a real cow.

B. Ask how many of them have been on a real dairy farm.

C. Ask who can tell the difference between dairy cattle and beef cattle.

II. Show a film or filmstrip, read a story, or display prints about a dairy farm. Discuss what the students have observed.

A. Ask what kind of buildings, equipment, and tools they saw. (milking machines, barn, silo, etc.)

B. Discuss what workers were pictured. (farmer and milkers or herds people)

C. Ask what other things they noticed about a dairy farm. (pastures, home, farm animals and their babies, etc.)

D. Ask if a dairy farmer produces goods or provides a service.

III. Visit a dairy farm, and ask the students to keep a record of the things they saw. (See Reference Sheet #1)

IV. Help the students become more aware of the tools used on a dairy farm.

A. Have them make a display of tools.

B. Let them make a chart with the pictures and names of the tools.

V. Have the students interview a veterinarian to become acquainted with his/her work and tools. (See Reference Sheet #2)

A. Let them ask what shots a cow needs.

B. Have them learn what particular treatment a cow needs to stay healthy.

C. Let them ask what tools the veterinarian uses.

Resources & Materials	Notes
II. A. Books - Dee and Curtis on a Dairy Farm, Green Movies - The Dairy Farm, Cornet Filmstrip - Life on a Dairy Farm National Dairy Council 11 N. Canal Street Chicago, IL 60606 SRA Prints - Dairy Workers Pictures are available from the National Dairy Council 11 N. Canal Street Chicago, IL 60606 Books - What is a Cow? Magazine article - "The Dairy Cow" by L. Smith, Highlights, Oct. 1972, p. 24-25. World Book Encyclopedia, Field Enterprise, Chicago, IL C. Reference Sheet #1 V. Reference Sheet #2	

D. Have them find out what training a person needs to become a veterinarian.

E. Let them ask what a cow needs to be healthy. (Emphasize those things all animals need to survive; i.e., air, water, and food.)

F. Let them learn what other animals besides cows a veterinarian treats.

G. Have them ask if the veterinarian goes to the animal when it is sick or if it must come to him/her.

VI. Encourage the students to compare today's dairy industry to the dairy industry of the past.

A. Have them make a bulletin board comparing the farms of yesterday and today.

B. Let them make a chart to compare the farms of yesterday and today; i.e., tractor and plow - horse and plow; milking machine - milking by hand; and a tank truck for delivery to the dairy - milk cans on a horse-drawn wagon.

C. Let them make a bulletin board of the tools used in the dairy industry of yesterday and today.

VII. Choose from these optional related activities.

A. Emphasize language arts skills.

1. Have the students use correct capitalization when writing thank you letters to the farmer and to the veterinarian. Let them use Activity Sheet #1 for practice. (See Reference Sheet #4)

2. Let the students study vocabulary or spelling related to the dairy farm. (See Reference Sheet #3)

a. Have them use flash cards.

b. Let them make a picture-word dictionary.

c. Let them do the crossword puzzle on Activity Sheet #2. (See Reference Sheet #4)

d. Have them unscramble the words on Activity Sheet #3. (See Reference Sheet #4)

Resources & Materials	Notes
1. Activity Sheet #1 Reference Sheet #4 2. Reference Sheet #3 c. Activity Sheet #2 Reference Sheet #4 d. Activity Sheet #3 Reference Sheet #4	

e. Let them find the hidden words on Activity Sheet #4. (See Reference Sheet #5)

3. Have the students search to find out more about a cow. Let them report their findings to the class on Activity Sheet #5. (See Reference Sheet #6)

4. Let the students collect and assemble, on a table or in a corner, books and poems about the farm and farm animals. Let them bring books from home and from the public or school libraries. Have them browse and read during free time. (Give them an opportunity to share pictures and poems with the class.)

B. Stress math skills by letting the students work addition and subtraction story problems about cows on Activity Sheet #6. (See Reference Sheet #7)

C. Emphasize art skills.

1. Have the students make dioramas or shadow boxes.

2. Let them make a table scene or a display of a farm.

D. Stress science skills.

1. Give the students Activity Sheet #7 or regular drawing paper, and let them depict the characteristics of different breeds of cattle.

2. Let the students use eye droppers, drinking straws, or suction tubes to study the similarity of the suction done by a milking machine.

3. Have the students plant different seeds (preferably corn) and keep observational records on Activity Sheet #8.

a. Let them discover what the plant needs to grow.

b. Have them record the daily changes (roots appear, sprouts come, etc.)

c. Let them record how much it grows each week by measuring it to the nearest inch.

E. Emphasize social studies by letting the students study maps or do research on the regions within the U.S. where dairy farming is the most concentrated.

Resources & Materials	Notes
e. Activity Sheet #4 Reference Sheet #5 3. Activity Sheet #5 Reference Sheet #6 B. Activity Sheet #6 Reference Sheet #7 D. 1. Activity Sheet #7 3. Activity Sheet #8	

Capsule #2
Storage and Transportation

I. Emphasize the importance of the storage and the transportation of milk by leaving a glass of milk in the room overnight or even longer.

A. Ask what happened to the milk.

B. Ask how it smells.

C. Ask how it would taste.

D. Ask if there is any way to leave milk overnight. (In a thermos or in a refrigerator)

E. Ask what would happen to milk that was not refrigerated as it was being transported from the dairy to the creamery.

F. Ask what types of trucks are used to transport milk.

II. Show films, display prints, read stories, visit a creamery, or interview dairy workers.

A. Ask the students who buys the milk from the farmer. (The Creamery)

B. Ask who insures that the milk is clean. (The Health Inspector)

C. Ask how milk is kept cool until it is picked up. (It is kept in coolers)

D. Ask how the milk house is kept clean. (It is washed every day with a disinfectant)

E. Ask why milk is kept cool. (Coolness keeps the germs from growing)

F. Ask how milk is kept clean and cool while being transported. (It goes in a refrigerated tank truck)

G. Ask what workers help to inspect and transport milk. (The County Health Inspector, the dairy plant workers, and the truck driver)

H. Ask if these people produce goods or render services.

I. Ask what tools these workers use.

J. Ask how these tools compare to the tools used in the past.

Resources & Materials	Notes

II. Choose from these opticnal related activities. (Answers for this Capsule are on Reference Sheet #9)

A. Stress science and math skills.

1. Have the students study refrigerated and unrefrigerated milk. Let them take the milks' temperatures and observe their odors, tastes, and colors. Use Activity Sheet #11.

2. Let the students practice using a thermometer.

a. Have them keep a record of the milk kept at the various temperatures.

b. Have the students practice reading a thermometer. Use Activity Sheets #9 and #10.

B. Emphasize reading and language arts skills.

1. Have the students study the vocabulary words related to the tank truck. (See Reference Sheet #8)

2. Let them unscramble the vocabulary words on Activity Sheet #12.

Resources & Materials	Notes
II. Reference Sheet #9 A. 1. Activity Sheet #11 Thermometers (Refrigerators, Thermos) b. Activity Sheets #9 and #10 Thermometers Milk - 2 glasses Thermos bottle B. 1. Reference Sheet #8 2. Activity Sheet #12	

Capsule #3
Creamery

(Answers for these activities are on Reference Sheet #12)

I. Contact a creamery for the class to visit. See Reference Sheet #1 which explains how to handle a field trip.

A. Have the students watch to see how ice cream is made.

B. Let them observe the processes milk goes through in a creamery.

C. Have them see the equipment used in a creamery.

D. Let them observe the workers in a creamery.

E. Have them watch how milk is bottled or packaged.

F. Let them learn why milk is homogenized and pasteurized.

II. Review the workers in the creamery by letting the students play "Who Am I?"

A. Have the one who is "It" describe his/her work or what tools he/she uses in the creamery.

B. Let the other students guess what job he/she perfers.

III. Choose from these optional related activities.

A. Stress science and social studies skills.

1. Have the students make a dairy product such as ice cream, cheese, or butter. Have another adult in the room when making this product.

2. Break the students into small groups to allow more of them to use the measuring skills they have acquired and to practice social skills. (See Reference Sheet #10)

B. Stress language arts skills.

1. Have the students study the vocabulary words associated with the creamery and add them to their spelling lists. (See Reference Sheet #11)

2. Have the students send a "thank you" note with a properly addressed envelope to a creamery or to a resource person. Let them use Activity Sheets #13 and #14 for practice.

3. Read the biography of Louis Pasteur and his contribution to society.

Resources & Materials	Notes
I. Reference Sheet #1 Reference Sheet #12	
III.	
2. Reference Sheet #10 Ingredients	
B.	
1. Reference Sheet #11	
2. Activity Sheets #13 and #14	
3. Filmstrip or Book on Pasteur	

C. Emphasize math skills.

1. Provide a corner of the room with cups, pints, quarts, and gallons for the students to use. Use water, sand, or sawdust for experimenting. Have the students use measuring tools to experiment. Let them fill out Activity Sheets #15, 16, and 17.

2. Provide old magazines or newspapers, and let the children cut out pictures.

   a. Let them show how much milk it takes to make a dairy product.

   b. Have them display the different products produced in a dairy.

3. Show the students the differences between homogenized milk and raw milk. (Use Activity Sheet #18)

   a. Place a covered glass of each in a refrigerator and let them set.

   b. Let the students observe the raw milk's separation and its difference in color.

4. Let the students study molds to discover their characteristics. Let them learn how molds help people. (Use Activity Sheet #19)

D. Stress art skills.

1. Let the students draw pictures of the creamery to place in their files.

2. Have them make a mural or a bulletin board of the creamery.

Resources & Materials	Notes
C.	
1. Activity Sheets #15, 16, and 17 Measuring cups, quarts, pints, gallons, water, sand, or sawdust.	
2. Old magazines, newspapers	
3. Activity Sheet #18 Raw milk and homogenized milk	
4. Activity Sheet #19	
D.	
1. Paint, large paper	
2. Paint, large paper	

Capsule #4
Retailer and Consumer

I. Introduce this capsule with the following discussion:

A. Ask the students how many of them have milk delivered to their homes.

B. Ask the students who don't have it delivered directly to their homes where they get their milk.

C. Ask how the delivery truck and tools compare to those which were used in the past and how these differences affect milk delivery. (Explain that a refrigerated truck, not a horse-drawn wagon, means that the milk does not spoil as easily. Say that people who deliver milk are able to cover a larger area. Stress that more people have cars and may not need to have their milk delivered.)

II. Use Activity Sheet #20 to help the students become more aware of the tools and job characteristics of the person who delivers milk. (Answers on Reference Sheet #13)

III. Review the five (5) dairy-process stages - farmer, transportation to the creamery, delivery of milk, and consumer - with the following culminating activities:

A. Have the students act out the worker stages from farm to consumer.

B. Let the students make a scrapbook depicting worker stages in the dairy industry.

C. Have the students role-play worker stages of the dairy industry and omit one stage. Let them discuss the consequences of leaving out that stage.

D. Let the students arrange pictures of dairy processing in the correct order.

IV. Choose from these optional related activities.

A. Stress language art activities.

1. Let the students read or write stories about people who deliver milk.

Resources & Materials	Notes
II. Activity Sheet #20 Reference Sheet #13	

2. Have the students study the words related to the person who delivers milk.

   a. Let them study spelling words. (See Reference Sheet #14)

   b. Have them unscramble words on Activity Sheet #21.

   c. Have the students use Activity Sheets #22a and #22b to work a crossword puzzle of dairy products. (Answers on Reference Sheet #15)

3. Stress reading and observation skills by asking the students to bring empty containers from milk products. Point out the importance of being a wise shopper. Have the students examine the labels to see how many things are told about the product. Let them fill in Activity Sheet #23.

B. Emphasize social studies skills by reinforcing the idea of goods, services, and a knowledge of the workers within the dairy unit. Have the students play "What's My Line".

1. Let one student come up to the front of the room and "sign in" under a name such as Mr. Black. Have him/her whisper the name of his/her occupation in the teacher's ear.

2. Let the other students take turns asking questions which may be answered "yes" or "no". Allow a student to continue asking questions until he/she receives a "no" answer.

3. Let the student in front be asked ten (10) "no" questions before he/she reveals the name of his/her occupation if it has not been guesed.

4. Let another student "sign in" in and continue the game.

C. Stress art skills.

1. Help the students appreciate the value of recycling by letting them construct bird feeders, pencil holders, paper cows, and candle molds from old milk cartons.

Resources & Materials	Notes
a. Reference Sheet #14 b. Activity Sheet #21 c. Activity Sheet #22a and #22b Reference Sheet #15 3. Activity Sheet #23	

2. Have the students collect milk cartons from their homes or their lunches at school. Let them use their imaginations to make milk trucks from the milk cartons.

D. Emphasize motor skills by letting the students play the eye-hand coordination game on Activity Sheet #24.

E. Stress math skills.

1. Have the students work the math problems dealing with themselves as consumers on Activity Sheet #25. (Answers on Reference Sheet #13)

2. Use play money and activity sheets to introduce the use of money by the consumer.

a. Let the students fill out Activity Sheets #26, 27, and 28. (Answers on Reference Sheet #13)

b. Have the students drill each other on flash cards picturing money.

c. Let the students use empty dairy cartons and play money to "buy" dairy products. Have the students practice making change.

Resources & Materials	Notes
2. Milk cartons	
D. Activity Sheet #24	
1. Activity Sheet #25 Reference Sheet #13	
a. Activity Sheets #26, 27 and 28 Reference Sheet #13	

Reference Sheet #1
Field Investigation

Call the place the class is planning to visit at least one month in advance. Follow-up this call with a letter confirming all the things discussed and planned.

Discuss with the individual the following things:

1. Tell what you wish to see.
2. Mention what general questions the students will be asking.
3. Say how long they will be there.
4. Tell how many students will come.
5. Ask to which workers the students may talk.
6. Ask what equipment or tools the students may use or see.
7. Find out what kind of "hands on" experiences the students may have.

Obtain the principal's approval before planning the field investigation. Make bus arrangements for the students at least two weeks in advance.

Have two or three parents accompany the students on their trip. Contact them at least two weeks in advance.

Send a letter home to the parents telling where the students are going, when they are going, and if they need anything extra in the way of food, clothing, or money.

Prepare the students before the trip with the questions to ask the workers they will be seeing. Note that each investigation will be different. Suggest to the students that they bring a camera along.

Be sure to remind the building principal on the day of the trip about where the students are going and when they will return. Do the following activities when the students return from their trip:

1. Review what the students observed.
2. Review the interviews with the workers.

Be sure to send a thank-you letter or to have the students write and send one.

Reference Sheet #2
Role-Model

Contact the role-models at least two weeks prior to their visit. Explain what the students expect of them, and give them an idea of what questions the students will be asking. (See below) Be sure to have them bring as many tools as possible and wear their uniforms, if they have any. Follow this contact up with a letter to confirm the date, time, etc. Have the role-models plan to talk about twenty to twenty-five (20-25) minutes and then answer the students' questions. Be certain to tell the role-models that the students want to handle the tools and to try on parts of their uniforms, if possible.

Suggest the following questions to the role-models:

1. Ask, "What is your job?"
2. Say, "Do you like your job?"
3. Ask, "How many hours do you work a day?"
4. Say, "What kind of training have you had?"
5. Ask, "Does anyone check on what you do?"
6. Ask, "What do you like most about your job?"
7. Ask, "What do you like least?"
8. Say, "What tools do you use?"
9. Suggest questions about the model's personal life. (family, hobbies, etc.)
10. Ask, "What are desirable worker characteristics?"

Add more questions to this list for each occupation. Develop the questions with the class prior to the role-models' visit. Let the students write the questions down so that they have something to start with.

Tape-record the role-models' visit for playing at a later time. Take pictures to use when reviewing.

Follow-up their visit by a class discussion.

Send thank-you letters or have the students send them within a day or two after the role-models' visit.

Reference Sheet #3

chores

herd

pasture

graze

tractor

heifer

calves

ventilator

cooling tank

salt lick

silo

hayloft

silage

Holstein

feed

harvest

breed

milkhouse

inspector

disinfectant

cow

suction

udder

stall

cooler

Guernsey

Jersey

Brown Swiss

Ayshire

germs

temperature

bull

Reference Sheet #4

Answers to Activity Sheets #1-3

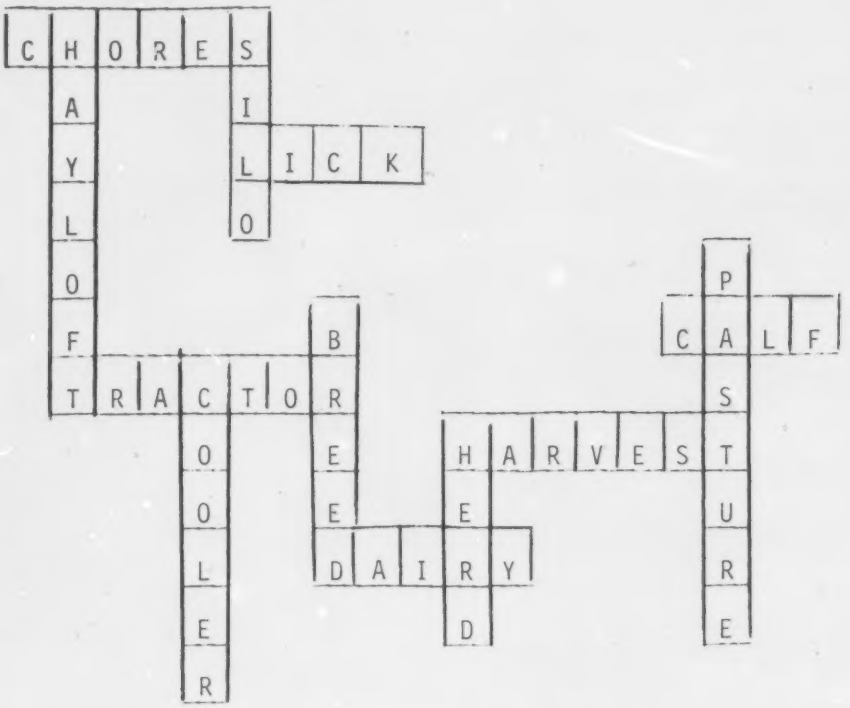
Activity Sheet #1

Dear Mr. Ross,

Thank you for letting us visit your farm. We liked seeing all the cows in your pasture and barn. We were surprised to see the big ring in the bull's nose. Your milkhouse was really clean. It even smelled clean. Thank you for answering all our questions.

Your friends,
Third Graders

Activity Sheet #2



Activity Sheet #3

1.	ramref	farmer	7.	flotyah	hayloft	13.	catrrot	tractor
2.	dreh	herd	8.	ructk	truck	14.	tobetl	bottle
3.	taspure	pasture	9.	nagir	grain	15.	turbet	butter
4.	losi	silo	10.	derud	udder	16.	ramec	cream
5.	radiy	dairy	11.	rabn	barn	17.	ruhcn	churn
6.	falc	calf	12.	latsl	stall	18.	torcan	carton

Reference Sheet #5

Answer to Activity Sheet #4

G R A Z E A X B C D Q Y B C
F G V H I R E L O O C J R K
L M E N O P D A I R Y Q E R
S T T U H E I F E R V W E X
Y T E I N S P E C T O R D G
L E R M I L K H O U S E Z E
L M I A B T C S T A L L D R
U P N E F G F H I J S K T M
B E A L M N C O W O I P R S
Q A R R S T U V L X L Y A Z
A T I B C A L F D Y O E C F
G U A H I J K L M N A G T P
Q R N R F A R M E R S H O T
U E V W E R U T S A P X R Y
Z A B C C H O R E S D E X Z

MILKHOUSE	TRACTOR	BULL
VETERINARIAN	CALF	GERMS
HAYLOFT	GRAZE	TEMPERATURE
CHORES	HEIFER	INSPECTOR
PASTURE	SILO	FARMER
COW	STALL	DAIEY
BREED	COOLER	SHOT

Reference Sheet #6

*THE COW

Everyone knows that cows give the milk people drink, but what is a cow really like? A cow is gentle and makes very little noise.

She moves about leisurely and spends most of her time browsing and resting. Still, her body is always busy making milk. A rather large animal, a good milk cow weighs about 1200 pounds.

Each day a cow drinks from 10 to 20 gallons of water. In a year she eats about 3100 pounds of mixed grains and concentrated feeds such as seed oil cake. Added to this are 2½ tons of hay and 6½ tons of silage, mostly made of chopped green corn and grasses. She also eats the grass from two or more acres of pasture.

A cow has not one, but four stomachs to help her digest all this feed. When a cow tears off grass, she swallows it only half chewed. This partly chewed feed goes to her first stomach. Here the feed is softened by liquids. It then moves to her second stomach. In her second stomach the feed is softened more and formed into small balls. Each ball of feed is called a cud and is about the size of a hen's egg.

Later, the cow gulps the cud back up into her mouth. She chews the cud 40 to 60 times before she swallows it again. This finely chewed feed goes into her third stomach and is broken up still more. Finally, the feed passes to the fourth stomach and is digested.

In return for all a cow eats, she will give around 3500 quarts of milk in a year. Of the 305 days each year she is milked, she gives about 11 quarts of milk a day. A cow is not milked 60 days of the year for a good reason. This period gives her time to rest her body and to store body materials just before her calf is born. She gives birth to one calf yearly.

Besides giving milk and having calves, the cow has created jobs for thousands of men and women who work in the dairy industry or help manufacture equipment or products used in a dairy plant or on a dairy farm.

about one cow — to every fourteen US Citizens

When people realize what a cow can do. they will know that she is quite a special animal. The story of milk begins with the cow. What happens to her milk on the dairy farm and in the dairy plant?

*Adapted from a National Dairy Association Publication.

Answers for Activity Sheet #5

1. 1,200 lbs.
2. 3,100 lbs. grain, 2½ tons of hay, 6½ tons silage, 2 or more acres of pasture
3. 10 - 20 gallons
4. 4
5. 3500 qts.
6. 305 days
7. It gives her time to rest and store materials for her calf

Answers for Activity Sheet #6

1. 300 pounds
2. 55 quarts
3. 305 days
4. 50 cows
5. 1400 pounds

Reference Sheet #8

Vocabulary related to Capsule #2

sour	refrigerate
purity	thermos
spoilage	perishable
transport	bulk pick up

Reference Sheet #9

Answers for Activity Sheets for Capsule #2

Activity Sheet #9

1. 20
2. 42
3. 52
4. 110
5. 88

Activity Sheet #10

Color as indicated

Activity Sheet #12

sour

purity

spoilage

perishable

transport

bulk pick up

thermos

refrigerate

Butter Recipe

1 pt. whipping cream
1 shaker or qt. jar
Shake until lumps appear
Add salt if wanted
Drain the buttermilk and place the butter clumps in a bowl. Run cool water over the butter and drain. With a wooden spoon press the excess moisture out of the butter. When no more water droplets appear, place butter in a dish or an old butter mold and refrigerate.

"A World of Wisconsin Cheese" pub. by Wisconsin Dept. of Agric.
801 West Badger Road
Madison, WI 53713

Ice Cream Recipe

6 eggs
2 C. sugar
1/8 t. salt
2 qts. milk
2 T. vanilla

Beat eggs completely. Add sugar slowly and continue to beat until mixture is very stiff. Stir in remaining ingredients.

Put top on, let the freezer run for 2 minutes. Add one pint of water to the bottom of the bucket. Sprinkle 3 tablespoons of water over layer of ice. Add 2 more inches of ice and then a layer of salt until the bucket is filled. Let the motor run for 20 to 30 minutes or until the motor stops. Unplug right away.

Reference Sheet #11

Bottling	Conveyor belt
pasteurized	Disposable containers
Homogenized	Filling machine
Sterilize	Capping machine
Automatic	Supervise
Wire case	Skim milk
Butter fat	Cream
Raw milk	Separater
Tester	Churn
Half & half	Cheese

Reference Sheet #12

Answers for Activity Sheets #13 - 17

Activity Sheet #13

Dear Sherman's Dairy,

Thank you for showing us through the creamery. We really liked watching the milk go into the cartons. Everyone liked eating the ice cream that you gave us as a treat.

Your Friends,
Third Graders from Coloma

Activity Sheet #14

Mr. Henry J. Bennet
Sherman's Dairy
County Road 683
South Haven, MI 49068

Mrs. Mary Halbert
Route #4
Battle Creek, MI 49794

Mr. Charles Hooper
3307 State Road
Deckerville, MI 49028

Sherman's Dairy
County Road 683
South Haven, MI 49068

Miss Susan Gray
P.O. Box 372
Hartford, MI 49032

Activity Sheet #5

2 pints = 1 quart

8 pints = 1 gallon

4 quarts = 1 gallon

1. 4
2. 4
3. 8, 4, 1,
4. 8
5. 3
6. 16

Activity Sheet #17

1. A quart
2. Quart
3. 1
4. Gallon

Activity Sheet #16

1. 4
2. 12
3. pints, quarts, gallons
   2 gallons
   2 quarts

2 pints of ice cream — 4 - one quart containers

a gallon of milk — 2 - one quart containers

4 pints of cream — one quart container

Reference Sheet #13

Answers for Activity Sheets #20 - 29

Activity Sheet #20

1. Vending Machine
2. Warehouse
3. Route
4. Loading Dock
5. Falet
6. Fork-lift Truck

Activity Sheet #21

outer	Warehouse
ouseharew	Loading Dock
letpa	Palet
chmanine - ingdenv	Fork-lift Truck
ucktr-tifl-rkof	Vending Machine
ckod-odlangi	Route

Activity Sheet #25

1. 95 cents
2. 10
3. 23 cents
4. 25
5. 99 cents

Observe pictures

Activity Sheet #27

1. $.59
2. $.90
3. $.95
4. $.55
5. $.65
6. $1.00

Activity Sheet #28

1. B
2. B
3. B
4. A
5. A
6. A
7. B
8. A
9. A
10. B
11. A
12. B
13. A
14. B
15. A

84

Reference Sheet #14

Warehouse

Loading dock

Palet

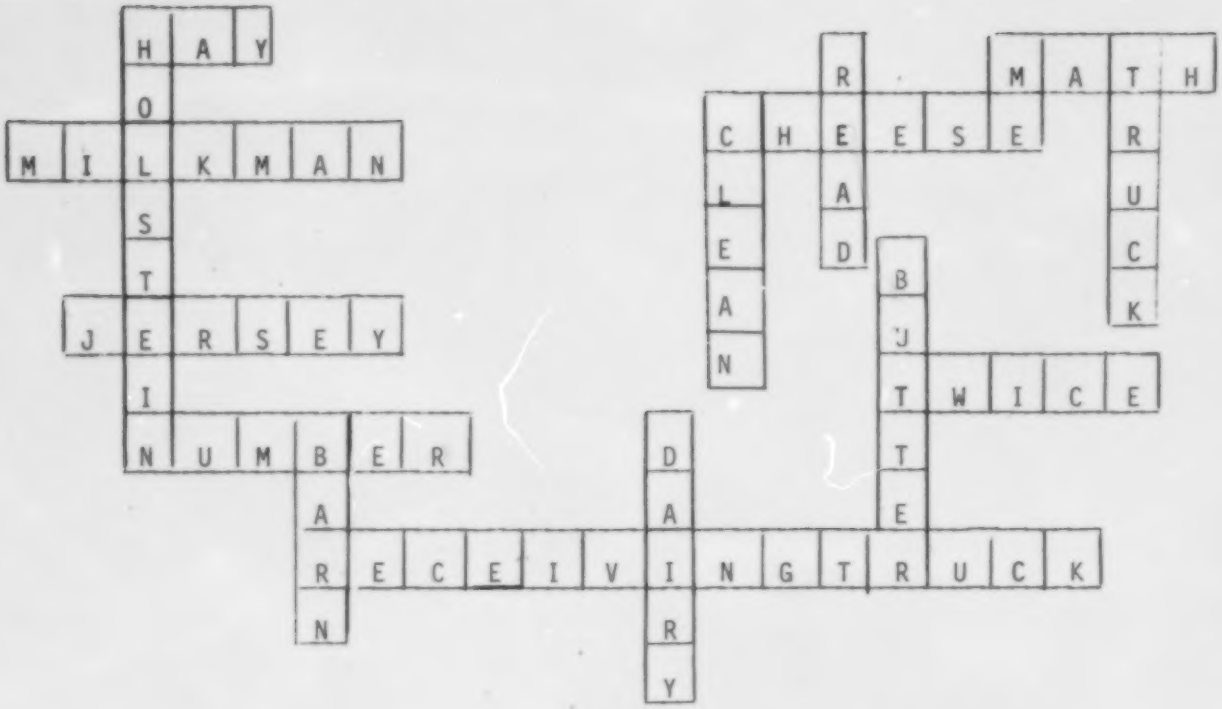
Fork-lift truck

Vending Machine

Route

Reference Sheet #15

Answers for Activity Sheet #22a and #22b



Activity Sheet #1

Name_____

Date_____

Correct the mistakes.

dear mr Ross,

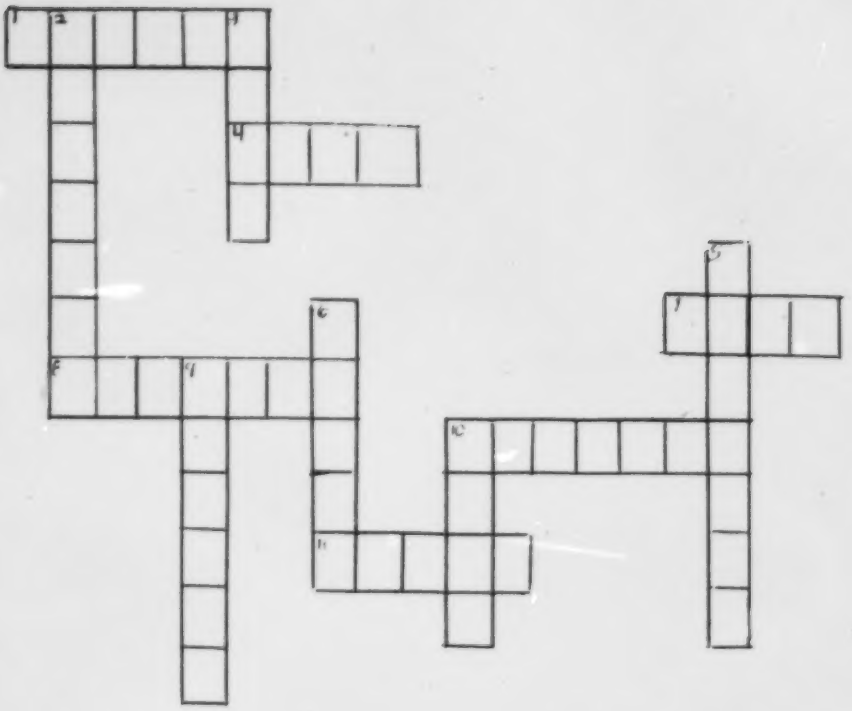
thank you for letting us visit your farm. We liked seeing all the cows in your pasture and barn. we were surprised to see the big ring in the bull's nose. Your milkhouse was really clean, it even smelled clean. thank you for answering all our questions.

your friends,
Third Graders

Activity Sheet #2

Name_____

Date_____



TRACTOR	HARVEST	CALF	HAYLOFT
BREED	COOLER	CHORES	LICK
PASTURE	SILO	HERD	DAIRY

ACROSS

1. WORK DONE ON A FARM
4. A COW USES A SALT_____
7. A YOUNG COW
8. A FARMER PLOWS HIS/HER FIELDS WITH THIS
10. TO GATHER CROPS
11. WHERE MILK IS KEPT

DOWN

2. WHERE HAY IS STORED
3. WHERE CHOPPED CORN IS STORED
5. WHERE A COW EATS GRASS
6. A KIND OF COW
9. WHERE MILK IS STORED
10. A GROUP OF COWS

Activity Sheet #3

Name_____

Date_____

UNSCRAMBLE THE WORDS

1. RAMREF_____
2. DREH_____
3. TASPRUE_____
4. LOSI_____
5. RADIY_____
6. FALC_____
7. FLOTYAH_____
8. RUCTK_____
9. NAGRI_____
10. DERUD_____
11. RABN_____
12. LATSL_____
13. CATRROT_____
14. TOBETL_____
15. TURBET_____
16. RAMEC_____
17. RUHCN_____
18. TORCAN_____

SILO	PASTURE	DAIRY	BOTTLE
FARMER	TRUCK	BARN	BUTTER
CALF	HERD	TRACTOR	CREAM
STALL	UDDER	CARTON	
HAYLOFT	GRAIN	CHURN	

Activity Sheet #4

Name_____

Date_____

FIND THE HIDDEN WORDS

G R A Z E A X B C D Q Y B E
F G V H I R E L O O C J R K
L M E N O P D A I R Y Q E R
S T T U H E I F E R V W E X
Y T E I N S P E C T O R D G
L E R M I L K H O U S E Z E
L M I A B T C S T A L L D R
U P N E F G F H I J S K T M
B E A L M N C O W O I P R S
Q A R R S T U V L X L Y A Z
A T I B C A L F D Y O E C F
G U A H I J K L M N A O T P
Q R N R F A R M E R S H O T
U E V W E R U T S A P X R Y
Z A B C C H O R E S D E X Z

MILKHOUSE
VETERINARIAN
HAYLOFT
CHORES
PASTURE
COW
BREED
TRACTOR
CALF
GRAZE
HEIFER
SILO
STALL
COOLER
BULL
GERMS
TEMPERATURE
INSPECTOR
FARMER
DAIRY

Activity Sheet #5

Name_____

Date_____

QUESTIONS YOU MIGHT ANSWER IN GIVING YOUR REPORT.

1. HOW MUCH DOES A COW WEIGH?_____

2. HOW MUCH FOOD DOES A COW EAT DURING A YEAR?_____

_____, _____, AND_____.

3. HOW MUCH WATER DOES A COW DRINK EACH DAY?_____

4. HOW MANY STOMACHS DOES A COW HAVE?_____

5. HOW MANY QUARTS OF MILK DOES ONE COW GIVE EACH YEAR?_____

6. HOW MANY DAYS A YEAR IS A COW MILKED?_____

7. WHY ISN'T A COW MILKED EVERYDAY?_____

_____

Activity Sheet #6

Name_____

Date_____

1. A GOOD MILK COW WEIGHS ABOUT 1200 POUNDS. FARMER PECK HAD A MILK COW THAT WEIGHED 1500 POUNDS. WHAT IS THE DIFFERENCE IN WEIGHT BETWEEN THE TWO COWS.

_____

2. A GOOD MILK COW GIVES 11 QUARTS OF MILK A DAY. IN 5 DAYS HOW MANY QUARTS OF MILK WILL THE COW GIVE?

_____

3. A COW IS NOT MILKED 60 DAYS OF THE YEAR BECAUSE THIS GIVES HER TIME TO REST HER BODY BEFORE HER CALF IS BORN. IF THERE ARE 365 DAYS IN A YEAR, HOW MANY DAYS IS THE COW MILKED?

_____

4. IF A FARMER HAS A DAIRY HERD OF 100 COWS AND SELLS 50 COWS, HOW MANY COWS DOES HE/SHE HAVE LEFT?

_____

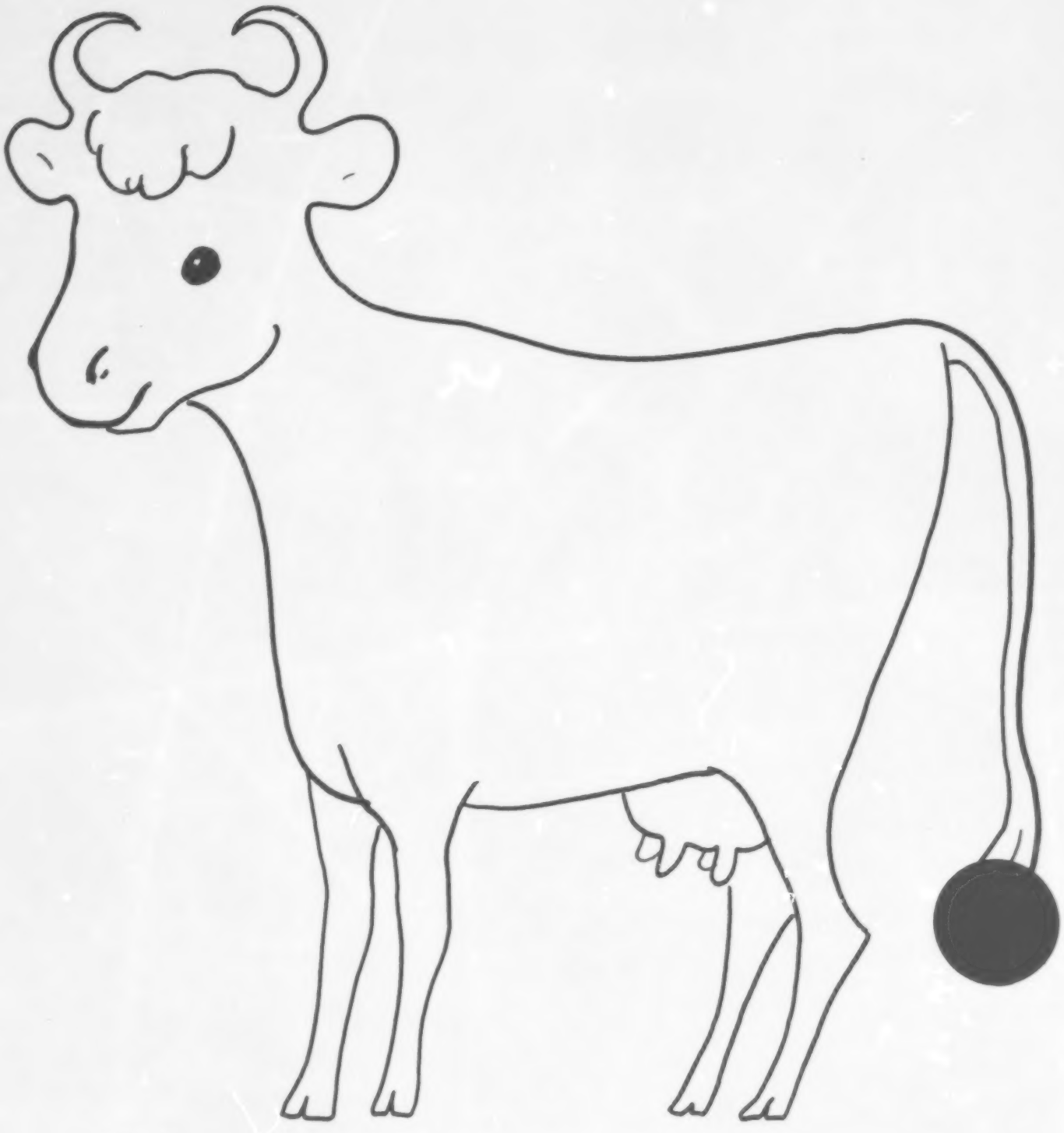
5. A BABY CALF WEIGHS 200 POUNDS AND THE MOTHER WEIGHS 1200 POUNDS. HOW MUCH DO THE BABY CALF AND MOTHER WIEGH ALTOGETHER?

_____

Activity Sheet #7

Name_____

Date_____



This is a_____cow.

Activity Sheet #8

Name _____

Date _____

WHAT WAS PLANTED _____

DATE PALNTED _____

THINGS I HAD TO DO TO MAKE THE PLANT GROW AND KEEP ON GROWING.

_____

_____

DATE I FIRST SAW THE PLANT COME THROUGH THE SOIL.

_____

DATE THE FIRST FLOWERS APPEARED _____

DATE THE FIRST FRUIT OR VEGETABLE SHOWS _____

DATE THE FRUIT OR VEGETABLE IS RIPE _____

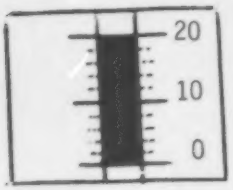
DATE	HEIGHT TO NEAREST INCH
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Activity Sheet #9

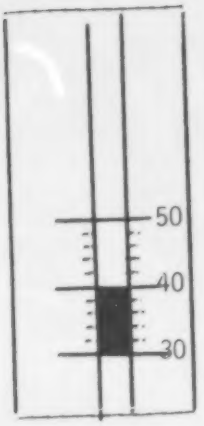
Name_____

Date_____

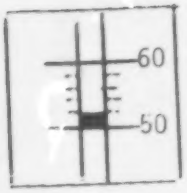
What is the temperature on each thermometer?



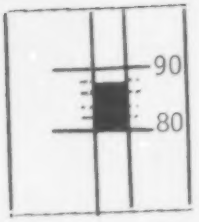
1. _____



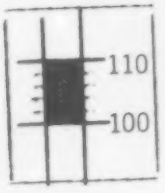
2. _____



3. _____



4. _____



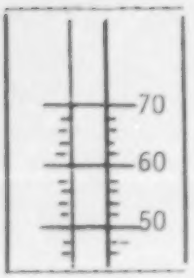
5. _____

Activity Sheet #10

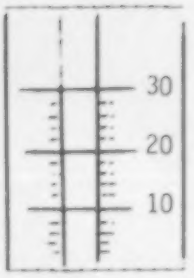
Name_____

Date_____

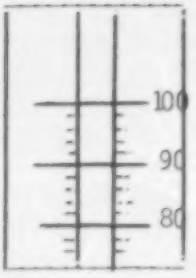
With a crayon, color in the correct temperature.



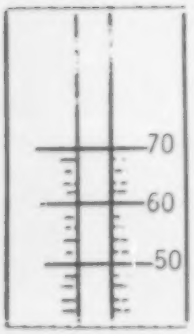
70°



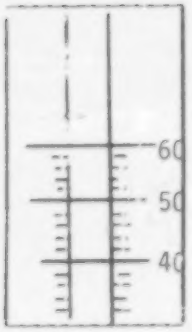
8°



92°



68°



44°

73

Activity Sheet #11

Name_____

Date_____

1. PLACE A GLASS OF MILK IN THE ROOM AND ONE IN THE REFRIGERATOR AND LEAVE OVERNIGHT. OBSERVE WHAT HAS HAPPENED AND WRITE WHAT CHANGES TOOK PLACE.

   MILK IN THE ROOM_____

   _____

   MILK IN THE REFRIGERATOR_____

   _____

2. TAKE THE TEMPERATURES OF THE MILKS AND RECORD THEM BELOW. PLACE A COVERED GLASS OF MILK IN THE ROOM AND ONE IN A THERMOS BOTTLE OVERNIGHT. TAKE THE TEMPERATURES OF BOTH MILKS THE NEXT DAY AND RECORD THEM AGAIN.

TEMPERATURE OF GLASS OF MILK	TEMPERATURE OF MILK IN THERMOS
_____	_____
_____	_____

   WHAT HAPPENED?_____

Activity Sheet #12

Name_____

Date_____

UNSCRAMBLE THE WORDS

OURS_____

PITYUR_____

AGEOILSP_____

ABLESHPERI_____

SPORTTRAN _____

KULB-ICKP-PU_____

MOSTHER_____

FRIGREERATE_____

SOUR	REFRIGERATE
PURITY	THERMOS
SPOILAGE	PERISHABLE
TRANSPORT	BULK PICK UP

Activity Sheet #13

Name_____

Date_____

Copy the following letter correctly.

DEAR SHERMAN'S DAIRY,

THANK YOU FOR SHOWING US THROUGH THE CREAMERY. WE REALLY LIKED WATCHING THE MILK GO INTO THE CARTONS. EVERYONE LIKED EATING THE ICE CREAM THAT YOU GAVE US AS A TREAT.

YOUR FRIENDS
THIRD GRADERS

Activity Sheet #14

Name_____

Date_____

Correct the mistakes

mr. henry j. bennet
sherman's dairy
County road 683
south Haven, Michigan 49068

Mr. charles Hooper
3307 State road
Deckerville, michigan 49028

mrs. Mary halbert
Route #4
Battle creek, michigan 49794

miss susan Gray
p.o. Box 372
hartford, michigan 49032

sherman's Dairy
County road 683
Route #6
South haven, Michigan 49068

Activity Sheet #15

Name_____

Date_____

Problems in Measuring Liquids

_____pints = 1 quart

_____pints = 1 gallon

_____quarts = 1 gallon

1. Mother made a gallon of lemonade for Mary's party. Each of her containers holds one quart, how many containers will she need to hold the lemonade?_____

2. Johnny wants to put a gallon of water in a bucket. He has a quart bottle to measure the water. How many times must he fill it?_____

3. Eight girls are going on a picnic. They need a pint of milk for everyone who goes on the picnic. How many pints of milk must they buy?_____ That would be how many quarts? _____ How many gallons?_____

4. Sally went to the store to buy 4 quarts of milk. When she got there the store only had pints. How many pints would she need to buy?_____

5. 2 pints = 1 quart
   I have 6 pints of milk. How many quart bottles will they fill?
   _____

6. 4 quarts = 1 gallon
   How many quarts are in 4 gallons?_____ Draw the picture.

Activity Sheet #16

Name_____

Date_____

Changing Measurement and Using It

1. How many pints are in 2 quarts?

2. How many quarts are in 3 gallons?

3. The milk delivery person must know about_____,
_____, and_____.

8 quarts = _____ gallons

4 pints = _____ quarts

Match the statement on the right with the one on the left.
Draw lines.

I want	I may use the following
2 pts. of ice cream	4 - one quart containers
A gallon of milk	2 - one quart containers
4 pts. of cream	One quart container

Activity Sheet #17

Name_____

Date_____

Measuring Liquids

When we measure liquids, we use the measures of pint, quart, and gallon. This is the way we measure milk, water, paint, and gasoline.

One <u>pint</u> is the small measure

One <u>quart</u> is 2 times as much as a pint

One <u>gallon</u> is 4 times as much as a quart

<u>Something to learn</u>

2 pts. = 1 quart

4 qts. = 1 gallon

8 pts. = 1 gallon

1. Which will cost more - a pint of milk or a quart of milk?

2. Jumping Jimmy Jones loves chocolate ice cream. Would he buy a pint or a quart of it?

3. Lucky Lucy's cat drinks 2 pints of milk a week. How many quarts is that a week?

4. Which will cost more - a quart of ice cream or a gallon of ice cream?

Activity Sheet #18

Name_____

Date_____

PLACE A COVERED GLASS OF RAW MILK AND A COVERED GLASS OF HOMOGENIZED MILK IN THE REFRIGERATOR OVERNIGHT.

TELL WHAT CHANGES YOU CAN SEE IN THE RAW MILK.

_____

_____

_____

_____

_____

_____

TELL WHAT CHANGES YOU SEE IN THE HOMOGENIZED MILK.

_____

_____

_____

_____

_____

_____

Activity Sheet #19

Name_____

Date_____

1. On what things might you find molds growing? Bring in some of these items for display. (Look in your Mom's refrigerator.)

_____

_____

2. Put some water on mold - what happens to the mold?

_____

_____

3. Place a moldy item in a strong light for a day. What happens?

_____

_____

4. What does mold feel like?_____

_____

5. What does mold smell like?_____

_____

6. What does mold look like under a magnifying glass?_____

_____

_____

Draw what you see:

Activity Sheet #20

Name_____

Date_____

WAREHOUSE	FORK-LIFT TRUCK
LOADING DOCK	VENDING MACHINE
PALET	ROUTE

1. A PLACE WHERE YOU CAN BUY MILK IS CALLED A_____ _____.

2. A _____ IS WHERE MILK IS STORED.

3. A MILK DELIVERY PERSON TRAVELS AROUND TO CERTAIN PLACES CALLED A_____.

4. THE PLACE WHERE A DELIVERY PERSON PUTS THE MILK INTO THE DELIVERY TRUCK IS CALLED A_____.

5. A_____ HAS STACKS OF MILK CASES ON IT.

6. A _____ _____ PICKS UP THE MILK CASES AND PUTS THEM ON A MILK TRUCK OR COOLER.

Activity Sheet #21

Name_____

Date_____

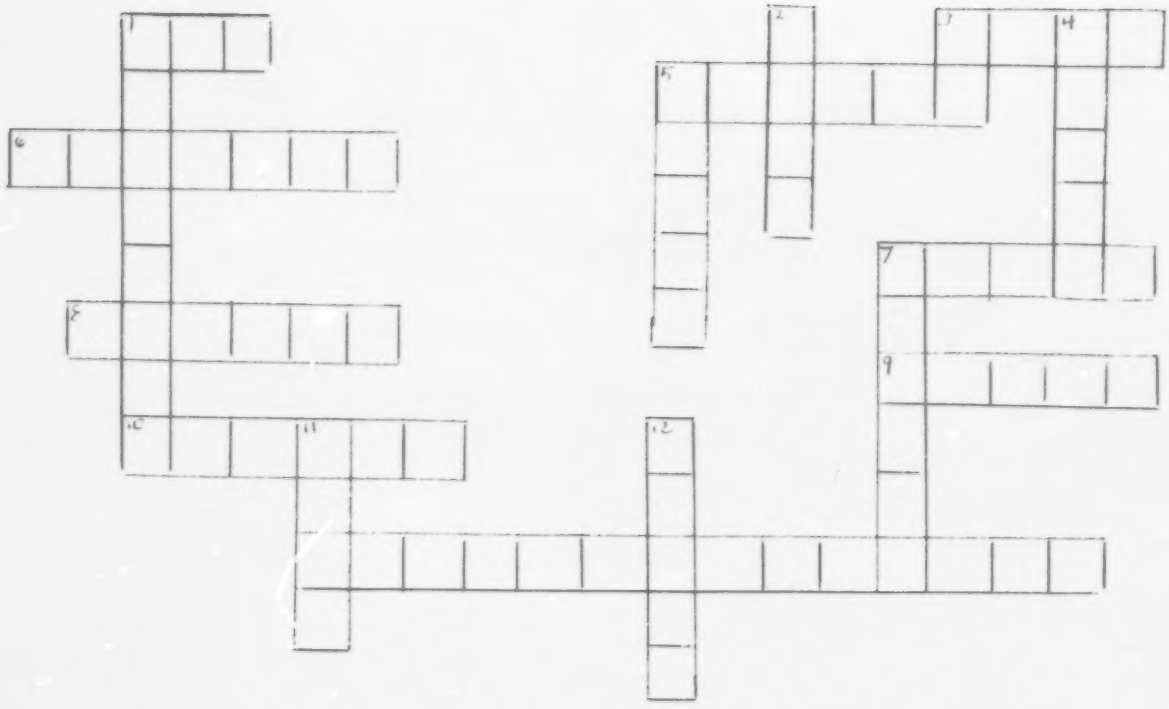
DIRECTIONS - DRAW A LINE FROM THE SCRAMBLED WORD TO ITS REAL NAME.

OUTER	WAREHOUSE
OUSEHAREW	LOADING DOCK
LETPA	PALET
CHMANIE - INGDENV	FORK-LIFT TRUCK
UCKTR-TIFL-RKOF	VENDING MACHINE
CKOD-ODLANGI	ROUTE

Activity Sheet #22a

Name _____

Date _____



Activity Sheet #22b

Name_____

Date_____

ACROSS

1. The cows eat grass and_____.
3. To know if he was paid the right amount of money, the farmer must know _____.
5. One dairy product is_____.
6. The person who performs the service of taking milk to homes is the _____.
7. Holsteins are_____and white.
8. The smallest breed of dairy cow is the_____.
9. A cow must be milked_____a day.
10. A cow wears a necklace with her_____ on it.
13. The truck that takes the milk from the farm to the creamery is the _____.

Down

1. A black and white cow is a_____.
2. To deliver milk to the correct place, the delivery person needs to know how to_____.
3. Milk builds strong bodies for everyone, even_____.
4. A delivery person drives a milk_____.
5. A dairy worker must be very_____so the milk is safe for people to drink.
7. Many years ago _____was made with a churn.
11. Cows are milked in the_____.
12. A _____ farmer raises cows and sells their milk.

USE THE FOLLOWING WORDS FOR YOUR PUZZLE.

HAY	MILKMAN	TWICE	DAIRY	TRUCK
JERSEY	BARN	BUTTER	HOLSTEIN	ME
CLEAN	RECEIVING TRUCK	MATH	CHEESE	
NUMBER	TRUCK	BLACK	READ	

Activity Sheet #23

Name_____

Date_____

1. WHAT IS THE NAME OF THE PRODUCT?

_____

2. WHAT IS THE NAME OF THE DAIRY THAT MADE THE PRODUCT?

_____

3. HOW MUCH DOES THE CONTAINER HOLD?

_____

4. WHAT DOES THE PRODUCT CONTAIN?

_____

5. IS THERE ANY OTHER INFORMATION GIVEN ON THE CONTAINER?

_____

6. WHERE IN THE STORE WAS THE PRODUCT FOUND?

_____

Activity Sheet #24

Name _____

Date _____

Help Mr. Bob deliver the milk to school.

Activity Sheet #25

Name_____

Date_____

1. Mrs. Brown paid 53¢ for a half gallon of milk and 42¢ for a carton of cottage cheese. How much did she spend all together?_____

2. On Monday Todd drank 3 glasses of milk, 4 glasses on Tuesday and 3 glasses on Wednesday. How many glasses of milk did he drink in three days?_____

3. A gallon of ice cream cost 98¢, and a pound of cheese cost 75¢. How much more does the ice cream cost than the cheese?

_____

4. On Thursday a milkman delivered 73 gallons of milk on his route and 98 gallons on Friday. How many more gallons did he deliver on Friday?_____

5. Mr. West bought a pound of butter for 72¢ and a pint of whipping cream for 27¢. How much did he spend?_____

Name_____

Date_____

DRAW A LINE FROM EACH NAME TO THE COIN IT NAMES. EACH PIECE OF MONEY WILL HAVE 2 LINES DRAWN TO IT.

dime

quarter

nickel

penny

half-dollar

one cent

ten cents

twenty-five cents

five cents

fifty cents

Activity Sheet #27

Name_____

Date_____

WRITE THE CORRECT AMOUNT ON THE BLANK NEXT TO THE COINS.

1.

$_____

2.

$_____

3.

$_____

4.

$_____

5.

$_____

6.

$

Activity Sheet #28

Name_____

Date_____

UNDERLINE WHICH ONE IS THE LARGER AMOUNT.

	(A)	(B)
1.	2 DIMES, 6 PENNIES	1 QUARTER, 1 DIME
2.	6 NICKELS, 12 PENNIES	6 DIMES, 7 PENNIES
3.	3 DIMES, 5 NICKELS	2 QUARTERS
4.	1 DIME	1 NICKEL, 3 PENNIES
5.	7 DIMES, 1 PENNY	1 HALF-DOLLAR, 1 DIME
6.	12 PENNIES, 3 NICKELS	1 QUARTER, 1 PENNY
7.	1 HALF-DOLLAR, 1 DIME	2 QUARTERS, 3 NICKELS
8.	8 DIMES, 2 PENNIES	2 QUARTERS, 2 NICKELS
9.	2 HALF-DOLLARS	2 QUARTERS, 2 DIMES
10.	1 QUARTER, 2 DIMES	1 HALF-DOLLAR, 3 PENNIES
11.	4 DIMES, 3 PENNIES	6 NICKELS, 1 DIME
12.	1 DOLLAR	4 QUARTERS, 2 DIMES
13.	5 DIMES, 2 NICKELS	2 NICKELS, 2 PENNIES
14.	8 DIMES, 1 QUARTER	3 HALF-DOLLARS
15.	4 QUARTERS, 1 DOLLAR	1 HALF-DOLLAR, 5 DIMES